

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Jean-Yves Le Naour, et al.

Ser. No.: n/a

Filed: Herewith

For: RECEIVING DEVICE WITH AUTOMATIC GAIN CONTROL

Examiner: n/a

Art Unit: n/a

PRELIMINARY AMENDMENT

Hon. Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination and calculation of fees, please enter the following amendment in the application filed herewith.

IN THE ABSTRACT

Kindly amend the abstract by replacing all the present paragraphs entirely with the replacement abstract as shown below. A marked up version of the replacement abstract is attached hereto to show the changes in accordance with 37 CFR 1.121 (b).

The invention aims to minimize the analogue/digital converter over-dimensioning within the framework of reception of signals originating from a satellite and exhibiting power levels which can vary over time. The invention proposes a technique of automatic gain control which handles the setting of the noise level associated with the amplified signal. The automatic gain control is achieved by neutralizing the signal received by the antenna, and by adjusting the gain during the neutralization of the signal received until a predetermined noise level is obtained at the end of the reception facility. The invention also pertains to a device comprising the means for implementing the method.

IN THE CLAIMS

Kindly replace Claims 1-9 with replacement claims as shown below, and add new claims 10-12. A marked up version of the replacement Claims 1-9 is attached hereto to show the change(s) made to each one of the Claims in accordance with 37 CFR 1.121(c).

We claim:

1. (Amended) A method for automatically controlling the gain in a radio frequency signal reception device, said device comprising at least one first low-noise amplification stage placed following a reception antenna, and at least one variable-gain device placed in the reception facility, the method comprising the steps of:
- neutralization of the signal received by the antenna; and  
adjustment of the gain during the neutralization of the signal received until a predetermined noise level is obtained at the end of the reception facility.
2. (Amended) The method according to Claim 1, wherein the neutralization of the signal received is carried out by cutting off the supply to the first low-noise amplification stage.
3. (Amended) The method according to Claim 1, wherein during signal reception, the following steps are performed:  
extraction of the noise power at the end of the reception facility; and  
adjustment of the gain until a predetermined noise level is obtained.
4. (Amended) The method according to Claim 3, wherein the extraction of the noise power at the end of the facility is carried out by performing the following steps:  
sampling and digitization of the signal at the end of the reception facility;  
digital demodulation of the digitized signal;  
modulation of the demodulated signal; and  
calculation of the noise power from the modulated signal and the digitized signal.
5. (Amended) A radio frequency signal reception device, said device comprising:  
at least one first low-noise amplification stage placed following a reception antenna;  
at least one variable-gain device placed in the reception facility;  
means for neutralizing the signal received by the antenna; and  
means for adjusting the variable-gain device as a function of the noise level at the end of the reception facility.

6. (Amended) The device according to Claim 5, wherein the means for neutralizing the signal received are switching means which switch the supply of the first amplification stage.

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7. (Amended) The device, according to Claim 5, further comprising:  
means for extracting the noise power during the reception of the  
signal; and

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means for adjusting the variable-gain device as a function of the noise  
level extracted.

8. (Amended) The device according to Claim 7, wherein the means for extracting the noise power during reception includes:

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means of sampling and means of converting the signal at the end of the  
facility into a digitized signal;

means for performing the digital demodulation of the signal and for  
obtaining a demodulated signal;

digital modulation means for modulating the demodulated signal and  
obtaining a modulated signal; and

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means for calculating the noise power from the modulated signal and the  
digitized signal.

9. (Amended) A device for transmitting/receiving radio frequency  
signal transmitted by a satellite, comprising:

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at least one first low-noise amplification stage placed following a  
reception antenna; and

at least one variable-gain device placed in the reception facility.

10. (Newly added) The device according to Claim 9, wherein the means  
for neutralizing the signal received are switching means which switch the supply of  
the first amplification stage.

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11. (Newly added) The device, according to Claim 9, further comprising:  
means for extracting the noise power during the reception of the  
signal; and

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means for adjusting the variable-gain device as a function of the noise  
level extracted.

12. (Newly added) The device according to Claim 11, wherein said means for extracting the noise power during reception includes :

sampling means and means of converting the signal at the end of the facility into a digitized signal;

means for performing the digital demodulation of the signal and for obtaining a demodulated signal;

means of digital modulation for modulating the demodulated signal and obtaining a modulated signal; and

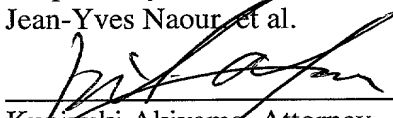
means for calculating the noise power from the modulated signal and the digitized signal.

REMARKS

Claims 1-9 have been amended to overcome informalities. New claims 10-12 have been added. The abstract has been amended to be contained in a single paragraph (MPEP § 608.01 (b)). It is believed that the claims and the amendment do not add new matter.

No fee is believed due in regard to the present amendment. However, if a fee is due, please charge the fee to Deposit Account 07-0832. Should any questions arise regarding any of the above, the Examiner is requested to contact the undersigned at 609-734-9404.

Respectfully submitted,  
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Marked up Version of the Replacement Abstract to Show Changes made in  
Accordance with 37 CFR 1.121 (b).

5 [Reception device with automatic gain control]

10 The invention aims to minimize the analogue/digital converter over-  
dimensioning within the framework of reception of signals originating from a satellite  
and exhibiting power levels which can vary over time. The invention proposes a  
technique of automatic gain control which handles the setting of the noise level  
associated with the amplified signal. The automatic gain control is achieved by  
neutralizing the signal received by the antenna, and by adjusting the gain during the  
neutralization of the signal received until a predetermined noise level is obtained at  
the end of the reception facility. The invention also pertains to a device comprising  
15 the means for implementing the method.

[Figure 2]

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Marked up Version of the Replacement Claims 1-9 to Show the Changes Made in  
Accordance with 37 CFR 1.121 (c).

5           [CLAIMS]  
          We claim:

1. (Amended)   [Method of] A method for [automatic control of]  
automatically controlling the gain in a [radiofrequency] radio frequency signal  
10 reception device, [the] said device comprising at least one first low-noise  
amplification stage placed following a reception antenna, and at least one variable-  
gain device placed in the reception facility, [characterized in that the following steps  
are performed:] the method comprising the steps of:

          [-] neutralization of the signal received by the antenna[.] ; and

15           [-] adjustment of the gain during the neutralization of the signal received  
until a predetermined noise level is obtained at the end of the reception  
facility.

2. ( Amended)   [Method] The method according to Claim 1,  
20 [characterized in that] wherein the neutralization of the signal received is carried out  
by cutting off the supply to the first low-noise amplification stage.

3. (Amended)   [Method] The method according to [one of] [Claims 1  
or 2, characterized in that,] Claim 1, wherein during signal reception, the following  
25 steps are performed:

          [-] extraction of the noise power at the end of the reception facility[.] ; and

          [-] adjustment of the gain until a predetermined noise level is obtained.

4. (Amended)   [Method] The method according to Claim 3,  
30 [characterized in that ] wherein the extraction of the noise power at the end of the  
facility is carried out by performing the following steps:

          [-] sampling and digitization of the signal at the end of the reception  
facility[.] ;

          [-] digital demodulation of the digitized signal[.] ;

35           [-] modulation of the demodulated signal[.] ; and

          [-] calculation of the noise power from the modulated signal and the  
digitized signal.

5. (Amended)   [Radiofrequency] A radio frequency signal reception  
40 device, [the] said device comprising:

at least one first low-noise amplification stage placed following a reception antenna[, and] ;

at least one variable-gain device placed in the reception facility[, characterized in that it comprises:] ;

5 [-] means for neutralizing the signal received by the antenna[.] ; and

[-] means for adjusting the variable-gain device as a function of the noise level at the end of the reception facility.

10 6. (Amended) [Device] The device according to Claim 5, [characterized in that] wherein the means for neutralizing the signal received are switching means which switch the supply of the first amplification stage.

7. (Amended) [Device] The device, according to [one of Claims 5 or 6, characterized in that it furthermore comprises:] Claim 5, further comprising:

15 [-] means for extracting the noise power during the reception of the signal[.]; and

[-] means for adjusting the variable-gain device as a function of the noise level extracted.

20 8. (Amended) [Device] The device according to Claim 7, [characterized in that] wherein the means for extracting the noise power during reception [comprise] includes:

[-] means of sampling and means of converting the signal at the end of the facility into a digitized signal[.];

25 [-] means for performing the digital demodulation of the signal and for obtaining a demodulated signal[.] ;

[- means of digital modulation] digital modulation means for modulating the demodulated signal and obtaining a modulated signal[.]; and

30 [-] means for calculating the noise power from the modulated signal and the digitized signal.

9. (Amended) [Device] A device for transmitting/receiving [radiofrequency signals] radio frequency signal transmitted by a satellite, [characterized in that it comprises the reception device of one of Claims 5 to 8] comprising:

35 at least one first low-noise amplification stage placed following a reception antenna; and

at least one variable-gain device placed in the reception facility.